

REMARKS

In the Official Action mailed 03 May 2007, the Examiner reviewed claims 1-10, 13-15, 18 and 19. The Examiner has rejected claims 1, 2, 4-6, 8, 14, 15, 18 and 19 under 35 U.S.C. §102(e); has rejected claim 1 under 35 U.S.C. §103(a); has rejected claim 3 under 35 U.S.C. §103(a); has rejected claims 7 under 35 U.S.C. §103(a); has rejected claim 9 under 35 U.S.C. §103(a); has rejected claim 10 under 35 U.S.C. §103(a); and has rejected claims 11-13 under 35 U.S.C. §103(a).

Applicant has amended claim 1. Claims 1-10, 13-15, 18 and 19 remain pending.

Rejection of Claims 1, 2, 4-6, 8, 14, 15, 18 and 19 under 35 U.S.C. §102(e)

The Examiner has rejected claims 1, 2, 4-6, 8, 14, 15, 18 and 19 under 35 U.S.C. §102(e) as being anticipated by Ikeda et al. (US 2003/0184339). Applicant notes that the Examiner has also rejected claim 1 under 35 U.S.C. §103(a) over Ikeda in view of Wirtz below.

Applicant has amended claim 1 to include “memory protected from overwriting or modification by an in circuit programming function and storing instructions for a configuration load backup function used to recover from an incomplete transfer of the configuration data from the programmable non-volatile configuration memory to the programmable configuration points within the configurable logic array”. The amendment is fully supported by the paragraphs [0030] and [0034] of the specification and by Figures 1-8 of the application as filed.

Ikeda does not disclose memory protected from overwriting or modification by an in circuit programming function and storing instructions for a configuration load backup function. Therefore, Ikeda does not anticipate claim 1 as amended.

Claims 2, 4-6, 8, 14, 15, and 18-19 depend from claim 1, and are patentable for at least the same reasons.

Accordingly, reconsideration of the rejection of claims 1, 2, 4-6, 8, 14, 15, 18 and 19 is respectfully requested.

Rejection of Claim 1 under 35 U.S.C. §103(a)

The Examiner has rejected claim 1 under 35 U.S.C. §103(a) as being unpatentable over Ikeda in view of Wirtz, II et al. (US 6,414,871). As described above, claim 1 has been amended to include “memory protected from overwriting or modification by an in circuit programming function and storing instructions for a configuration load backup function...”.

The amended claim 1 describes a new type of integrated circuit, addressing problems associated with the complexity and reliability of system-on-a-chip devices which include embedded programmable logic. Examples of problems that are addressed by the circuit of claim 1 include interruptions during in-circuit programming that can cause corruption of instructions stored in memory and configuration data needed to make the configurable logic work.

The “memory protected from overwriting or modification by an in circuit programming function and storing instructions for a configuration load backup function...” as recited in claim 1 enables the configurable logic to be configured to a useable state even in the event of an interruption in the transfer of the configuration data or if the instructions for the configuration function are corrupted.

Neither Wirtz nor Ikeda address these issues regarding system-on-a-chip devices.

Wirtz discloses remotely programming devices through a data communications link using a programming unit such as a personal computer, work station, or automated test equipment (See Wirtz column 6 lines 43-45). Wirtz describes reducing the time for programming multiple devices by downloading all of the configuration data onto a device prior to engaging in programming activities (See, Wirtz column 7 lines 49-52). Wirtz states that this “results in a one-time transaction between the host programming unit and the programmable device instead of several time-consuming, wasteful transactions.” (Wirtz column 7, lines 52-55). Wirtz does not address programming the device in the event of data corruption or an interrupt in the transfer of data during the programming activities.

Ikeda relates to an “integrated circuit device that has a high processing speed” (See Ikeda, paragraph [0008]). Ikeda discloses defining the functions of an integrated circuit by changing the connections within a matrix of “operation units” suited for special purpose processing (See Ikeda, paragraph [0005]). The connections within the matrix can be changed by an execution program stored in memory. However, Ikeda does not address programming the matrix in the event of corruption of the execution program or an interrupt in the transfer of data during the configuration of the matrix.

As reiterated by the Supreme Court in *KSR*, the framework for determining obviousness under 35 U.S.C. 103 is an analysis of the *Graham* inquiries (See, MPEP Section 2141.II).

In a review of Ikeda and Wertz, neither Ikeda nor Wertz disclose “memory protected from overwriting or modification by an in circuit programming function and storing instructions for a configuration load backup function...” as required by claim 1 of the present invention.

Furthermore, the integrated circuit of claim 1 is not simply an improvement or modification of Ikeda and Wirtz. Rather, it is a completely new device for providing greater flexibility for system-on-a-chip design using embedded configurable logic. Applicant submits that there is no evidence that it would have been obvious to one of ordinary skill in the art to modify or combine Wirtz and Ikeda to implement the claimed invention at the time of the present invention.

Therefore, claim 1 is patentably distinct and nonobvious and Applicant requests reconsideration of the rejection of claim 1.

Rejection of Claim 3 under 35 U.S.C. §103(a)

The Examiner has rejected claim 3 under 35 U.S.C. §103(a) as being unpatentable over Ikeda in view of Hsu et al. (US 5,359,570).

Claim 3 depends from claim 1 and neither Ikeda, as discussed above, nor Hsu et al. disclose the elements of claim 1. Therefore, claim 3 is patentable for at least the reasons discussed above and because of the unique combinations recited.

Accordingly, reconsideration of the rejection of claim 3 is respectfully requested.

Rejection of Claim 7 under 35 U.S.C. §103(a)

The Examiner has rejected claim 7 under 35 U.S.C. §103(a) as being unpatentable over Ikeda in view of Sun et al. (US 6,401,221).

Claim 7 depends from claim 1 and neither Ikeda, as discussed above, nor Sun et al. disclose the elements of claim 1. Therefore, claim 7 is patentable for at least the reasons discussed above and because of the unique combinations recited.

Accordingly, reconsideration of the rejection of claim 7 is respectfully requested.

Rejection of Claim 9 under 35 U.S.C. §103(a)

The Examiner has rejected claim 9 under 35 U.S.C. §103(a) as being unpatentable over Ikeda in view of Sun et al. (US 5,901,330), hereinafter referred to as "Sun2".

Claim 9 depends from claim 1 and neither Ikeda, as discussed above, nor Sun2 disclose the elements of claim 1. Therefore, claim 9 is patentable for at least the reasons discussed above and because of the unique combinations recited.

Accordingly, reconsideration of the rejection of claim 9 is respectfully requested.

Rejection of Claim 10 under 35 U.S.C. §103(a)

The Examiner has rejected claim 10 under 35 U.S.C. §103(a) as being unpatentable over Ikeda in view of Lawman (US 6,028,445).

Claim 10 depends from claim 1 and neither Ikeda, as discussed above, nor Lawman disclose the elements of claim 1. Therefore, claim 10 is patentable for at least the reasons discussed above and because of the unique combinations recited.

Accordingly, reconsideration of the rejection of claim 10 is respectfully requested.

Rejection of Claims 11-13 under 35 U.S.C. §103(a)

The Examiner has rejected claims 11-13 under 35 U.S.C. §103(a) as being unpatentable over Ikeda.

It is unclear why the Examiner has maintained the rejection of claims 11-12 since claims 11-12 were previously cancelled.

Claim 13 depends from claim 1 and Ikeda, as discussed above, does not disclose the elements of claim 1. Therefore, claim 13 is patentable for at least the reasons discussed above and because of the unique combinations recited.

Accordingly, reconsideration of the rejection of claim 13 is respectfully requested.

CONCLUSION

It is respectfully submitted that this application is now in condition for allowance, and such action is requested.

The Commissioner is hereby authorized to charge any fee determined to be due in connection with this communication, or credit any overpayment, to our Deposit Account No. 50-0869 (MXIC 1522-1).

Respectfully submitted,

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